

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A hybrid lens comprising a refractive surface that refracts incident light and a diffractive surface that diffracts light exiting the lens, the diffracting surface designed by a sag satisfying the following Equation,

$$sag = \frac{f_D + m\lambda - \sqrt{f_D^2 + r^2}}{n-1},$$

wherein f_D is a distance from a center peak to a focal point of the hybrid lens, r is a height from a center axis to each peak of the hybrid lens, n is the refractive index of the hybrid lens λ is the wavelength of incident light, and m is an integer[[.]], and
wherein the refractive surface has a low-order aspheric profile z satisfying the following Equation:

$$z(r) = \frac{cr^2}{1 + \sqrt{1 - (1+k)c^2r^2}} + Ar^4 + Br^6 + Cr^8 + Dr^{10},$$

wherein c is a curvature of the refractive surface, k is a conic coefficient representing a shape of the refractive surface, and A , B , C and D are fourth, sixth, eighth and tenth aspheric coefficients respectively.

2. (Cancelled)

3. (Original) The hybrid lens of claim 1, wherein the diffractive surface has a minimum diffraction pitch of 3 μ m.

4. (Original) The hybrid lens of claim 1, wherein the refractive surface has a numerical aperture above 0.85.

5. (Original) The hybrid lens of claim 1, wherein the diffractive surface has a depth L_m satisfying the following Equation:

$$L_m = \frac{\lambda}{n-1}$$